

Application No. 10/079,878
Reply to Office Action of July 24, 2003

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REMARKS

Applicants appreciate the Examiners helpful comments in the telephone discussion of November 24, 2003. Applicants have reinserted the paragraph at page 26 as discussed.

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

The present invention as set forth in amended **Claim 1** relates to a color toner composition comprising:

toner particles comprising:

a binder resin; and

a colorant and a release agent dispersed in the binder resin, and

0.3 to 1.5 parts by weight of titania having a primary particle diameter of 0.005 to 0.02 μ m as an external additive,

wherein the colorant has an average dispersion particle diameter not greater than 0.5 μ m;

the release agent and the binder resin are insoluble to each other;

the toner particles satisfy the following relationship:

$$0.05 \leq D_w/D_4 \leq 0.4,$$

wherein D_w represents an average dispersion particle diameter of the release agent and D_4 represents a weight-average particle diameter of the toner particles; and

the titania has a segregation rate of from 0.5 to 5 %.

The titania used as an additive in the present invention has an average primary particle diameter of from 0.005 to 0.02 μ m, as claimed, in order to ensure transparency and fluidity of the resultant toner.

Further, Example 2 of the present invention with a particle diameter of 0.02 μ m has a better performance than Example 11 with a particle diameter of 0.05 μ m which is outside the

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scope of the claimed invention. For Example, the Tables starting at page 54 show that the following properties are superior for Example 2 compared to Example 11: transparency, color reproducibility, background fouling even after 50,000 images, toner scattering even after 50,000 images, hollow defects even after 50,000 images, transfer irregularity and white spots even after 50,000 images and durability. None of the cited references or their combination discloses or suggests these superior properties.

Anno et al and Takezawa et al alone or in combination fail to disclose or suggest a color toner composition as claimed as claimed, in which has 0.3 to 1.5 parts by weight of titania having a primary particle diameter of 0.005 to 0.02 μ m and a segregation rate of from 0.5 to 5 %.

Anno et al disclose fluidizing agents such as titania (Anno et al, col. 7, lines 14-22). There is no disclosure of the specific particle size of these fluidizing agents disclosed. The hydrophobic titanium oxide disclosed in the Examples, has a primary particle size of 30 μ m (Anno et al, col. 12, line 54). Thus, the particle size of the titania of Anno et al is much larger than the claimed size. In addition, the titania of Anno et al is surface modified. Even further, Anno et al fail to disclose or suggest the claimed rate of segregation of the toner.

Takezawa et al disclose a variety of inorganic particles at col. 4, lines 32-36. Titanium oxide is one of them. However, the claimed primary particle size of titania is not disclosed or suggested.

Thus, both of Anno et al and Takezawa et al fail to disclose or suggest the claimed primary particle size of titania. Accordingly, even a combination of Anno et al and Takezawa et al does not render the claimed invention obvious, because the secondary reference fails to cure the defects of the primary reference.

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In addition, the superior properties of the claimed titania are shown by the comparison of Example 2 and Example 11. None of the cited references or their combination discloses or suggests these superior properties.

Therefore, the rejection of Claims 1, 3, 5, 7, 8, and 12 under 35 U.S.C. § 103(a) over Anno et al in view of Takezawa et al is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

The rejection of Claim 2 under 35 U.S.C. § 103(a) over Anno et al in view of Takezawa et al and further in view of Katoh et al is respectfully traversed.

Katoh et al also fail to cure the defects of Anno et al and Takezawa et al as they fail to disclose or suggest the claimed titania having in the claimed amount and the claimed segregation rate. Thus, even a combination of the cited references does not result in the claimed invention, and this rejection should be withdrawn.

In addition, the superior properties of the claimed titania are shown by the comparison of Example 2 and Example 11. None of the cited references or their combination discloses or suggests these superior properties.

The rejection of Claim 4 under 35 U.S.C. § 103(a) over Anno et al in view of Takezawa et al and further in view of Eguchi et al is respectfully traversed.

Eguchi et al also fail to cure the defects of Anno et al and Takezawa et al as they fail to disclose or suggest the claimed titania having the claimed segregation rate and the claimed amount. Moreover, Eguchi et al only uses the titania in examples for black toner and not in a color toner as claimed. There is no suggestion or motivation to use the titania of Eguchi et al in a color toner. Thus, even a combination of the cited references does not result in the claimed invention and this rejection should be withdrawn.

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In addition, the superior properties of the claimed titania are shown by the comparison of Example 2 and Example 11. None of the cited references or their combination discloses or suggests these superior properties.

Therefore, the rejection of Claim 4 under 35 U.S.C. § 103(a) over Anno et al in view of Takezawa et al and further in view of Eguchi et al is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

In addition, the rejection of Claims 1, 3, 5-9 and 11-13 under 35 U.S.C. § 103(a) over Bertrand et al in view of JP 11-258847 and further in view of Otani et al is respectfully traversed.

Bertrand et al fail to disclose or suggest the claimed particle size and the claimed segregation rate. A number of additives is disclosed at col. 14, lines 35-50. Titanium oxide as external additive is disclosed in col. 14, line 43. However, its particle size is not specified. In addition, the segregation rate must be higher than 5% because a specific mixing method is used to control the segregation rate. Further, Bertrand et al fail to disclose or suggest the solubility of the release agent and the binder, the particle diameter relationship of the release agent and the toner.

None of JP 11-258847 and Otani et al cure the defects of Bertrand et al as they fail to disclose or suggest the claimed titania having the claimed segregation rate and the claimed particle diameter. In addition, JP 11-258847 does not disclose the claimed particle diameter relationship of the release agent and the toner.

Otani et al disclose colloidal silica as external additive at col. 10, line 44. There is no disclosure or suggestion of the claimed titania having the claimed particle size.

JP 11-258847 discloses that the primary particle diameter is 0.2 μm or less (JP 11-258847, claim 8). However, in the present invention, a broad range such as 0.2 μm or less is

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insufficient and a smaller diameter, i.e., from 0.005 to 0.02 μm is required. The titania used as an additive in the present invention has an average primary particle diameter of from 0.005 to 0.02 μm , as claimed, in order to ensure transparency and fluidity of the resultant toner. In addition, the superior properties of the claimed titania are shown by the comparison of Example 2 and Example 11. None of the cited references or their combination discloses or suggests these superior properties.

Therefore, the rejection of Claims 1, 3, 5-9 and 11-13 under 35 U.S.C. § 103(a) over Bertrand et al in view of JP 11-258847 and further in view of Otani et al is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

Finally, Applicants note that MPEP §821.04 states, "if applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined." Applicants respectfully submit that should the elected group be found allowable, the non-elected claims 9 and 10 should be rejoined.

In addition, if Claim 1 is found allowable, the non-elected Claims 14 and 21 should be allowable as well.

Applicants appreciate the consideration of the large number of references filed in this application as well as identification of the relevant references by the Examiner.

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This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

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